

PROJECT DESCRIPTION

GMT1 DEVELOPMENT PROJECT



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1.0 APPLICANT

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2.0 PROJECT LOCATION

The proposed GMT1 project is located in the National Petroleum Reserve – Alaska (NPR-A) near the Beaufort Sea. The field is approximately 14 miles west of the ConocoPhillips operated Alpine field on the North Slope of Alaska. GMT1 will be the first satellite developed in the recently established Greater Mooses Tooth Unit (GMTU). Sheets 1, 3, and 4 along with Table 1 show the project location including the GMT1 drill site, road, and pipelines and the location of the Alpine field in relation to the GMTU and the proposed GMT1 drill site.

Table 1: Drill Site Location

<u>Drill Site</u>	<u>Lease</u>	<u>Section</u>	<u>Township</u>	<u>Range</u>	<u>Latitude</u>	<u>Longitude</u>
GMT1	AA 081798	6	10N	3E	70.2543	-151.4535

The GMT1 drill site will be within the North Slope Borough (NSB) on land under lease to CPAI and Anadarko Petroleum Company (Anadarko). The Bureau of Land Management (BLM) holds surface ownership of the drill site (AA-081798), and the majority of the road and pipeline route. Portions of the road and pipeline route near the proposed CD5 project lie on surface lands held by the Kuukpik Corporation, an exception is the pipeline corridor between CD4 and the main facilities at the CD1 pad, which are owned by the State of Alaska. ASRC owns most of the mineral rights for the entire anticipated prospect, as shown on the Land Tenure Map provided as Attachment 1. None of the proposed project facilities are located on or near Native Allotments.

3.0 PROJECT OVERVIEW

CPAI proposes placement of 72.5 acres of fill material to construct the GMT1 drill site, an access road, pipeline valve pads, pipelines, bridge abutments, communication equipment, and power lines for oil and gas production. See Sheet 4 for specific gravel volumes and acreage of fill for the various project components. Volumes are final grade estimates.

4.0 PROJECT PURPOSE AND NEED

CPAI's purpose for placement of fill material is to construct a drill site and access road to facilitate the development of oil reserves. Oil, gas, and water produced from the reservoir will be carried via pipeline to Alpine's CD1 for processing. Sales quality crude will be transported from CD1 via the Alpine Oil Pipeline and Kuparuk Pipeline to the

Trans-Alaska Pipeline. Lean gas and Kuparuk-supplied seawater will be delivered to the drill sites via pipelines from CD1 for injection into the reservoirs. The proposed drill site will be operated and maintained by Alpine staff and supported using CD1 infrastructure.

5.0 PROJECT BACKGROUND

5.1 History

Development in the CRU began with the Alpine CD1 and CD2 drilling sites and associated facilities. Oil production from CD1 commenced in November 2000 and from CD2 in November 2001.

In January 2003 the U.S. Bureau of Land Management (BLM) and cooperating agencies (U.S. Army Corps of Engineers [USACE], the U.S. Environmental Protection Agency [USEPA], the U.S. Coast Guard [USCG] and the State of Alaska) initiated the Alpine Satellite Development Plan (ASDP) Environmental Impact Statement (EIS) for the five proposed drill sites (CD3 through CD7). The Final EIS was issued in September 2004 and the BLM's Record of Decision, which governs the two satellites on BLM lands (GMT1 and GMT2, formerly known as CD6 and CD7), was issued in November 2004.

On August 23, 2004, CPAI requested prioritization of permits for CD3 and CD4 to meet the construction schedule for those two satellites. Most permits were issued by December 2004 and construction of CD3 and CD4 began in January 2005 and production began in 2006. Permitting for CD5 is was completed in 2012.

The GMTU was established in 2008 through petition to BLM to establish the GMTU and approve the GMTU Agreement. CPAI requested that the BLM designate and approve the proposed Unit Area so CPAI could perform exploration and development operations in an efficient and logical manner under a unit plan of operations. Previous developments (CD1, CD2, CD3, and CD4) and the proposed CD5 are in a different reservoir within the established Colville River Unit (CRU). GMT1 was previously identified as CD6 and was renamed after it was determined that it would not be part of the CRU and would be in the newly established GMTU.

5.2 Future Plans

Upon the successful permitting and construction of GMT1, CPAI intends to submit permit applications for development of GMT2, formerly known as CD7, which was included in the ASDP and FEIS. The exact dates for these applications are unknown at this time.

6.0 GMT1 DEVELOPMENT SCHEDULE

CPAI proposes to construct the GMT1 facilities on a two-year schedule:

3Q 2013 – Submit permit applications and supporting documents.

4Q 2014 to 1Q 2016 – Order long lead materials for the GMT1 project (e.g., steel).

4Q 2015 – Begin first season ice road construction in support of GMT1 construction.

1Q 2016 – Gravel mining, construction of gravel road and pad, bridge piers substructure and superstructure.

4Q 2016 – Begin second season ice road construction in support of GMT1 construction.

1Q 2017 – Install VSMs, pipelines, power and telecom cable, and facilities.

4Q 2017 – First production.

As detailed design progresses, the schedule may be modified. However, the identified work will occur in the indicated seasons and sequence. Workover operations will occur intermittently throughout the life of the field.

7.0 PROJECT COMPONENTS

The proposed project will consist of the following components.

On-pad facilities:

- 11.8 acre gravel pad – 33 well capacity
- Emergency shutdown valve skid
- Test separator
- Electrical control module
- Pig launching/receiving facility
- Chemical injection module (including tanks, containment, and truck loading facility)
- Production heater
- Communication tower
- Lighting as needed

Other project components:

- 7.8 mile gravel road from CD5 to GMT1
- 18.7 acre Clover Material Source (Sheets 1 and 19)
- Two rig capable bridges (350' and 40') (Sheets 26 through 31)
- 8.4 miles of pipelines from GMT1 to CD5 on new VSMs (20" produced crude, 14" water injection, 6" miscible injection, 6" lean gas)
- 3.3 mile long pipeline rack on new VSMs from CD4N to CD1/ACF
- Pipeline tie-ins at CD5 and CD1/ACF
- 8.4 mile power and fiber optic communication lines from CD5 supported by pipeline horizontal support members (HSMs) (see Sheet 8)

- Two 0.35-acre manual valve gravel pads

The following criteria were evaluated in siting the GMT1 pad, the access road, and the pipeline:

- Fish Creek and Tifmiaqsiubvik (Ublutuoch River) setback areas
- Avian and other habitat (including wetlands)
- Archaeological resources
- Hydrology and drainage
- Topography
- Minimizing gravel footprint
- Load requirements (road and bridge)
- Local community interests

7.1 Drill Site Design and Facilities

The proposed 11.8-acre GMT1 pad will be constructed with gravel and will be a minimum of 5.0 feet deep with side slopes of 2 feet wide to 1 foot high (2:1) (see Sheet 22).

Additional pad thickness will be provided if needed for thermal protection of permafrost. The pad surface will be 1,200 feet by 463 feet at its widest point where the access road enters the pad, narrowing to 290 feet at its narrowest point.

The pad is sized and designed to allow for all drill site facilities, valve shelters, rig movement, drilling material storage, and well work equipment. A total of 33 wells at 20-foot wellhead spacing (Sheet 6 of 36) are planned. Insulated conductors will be used to minimize subsidence issues and provide near well bore protection. Thermosyphons will be installed directly behind the wells to protect the pipe rack VSMs.

The GMT1 pad layout (Sheet 6 of 36) will include the following on-pad facilities:

- Emergency shutdown valve skid
- Test separator
- Electrical control module
- Pig launching/receiving module
- Chemical injection module (including tanks, containment, and truck loading area)
- Production heater

- Communication tower
- Lighting as needed

No processing of production fluids beyond routine well testing and process fluid heating is planned at the drill site. Reserve pits will not be constructed. The pad will be oriented northeast to southwest to minimize snow accumulation on the site. This orientation also allows the access road and pipeline corridor to enter from the northeast, resulting in a shorter road and pipeline. Alpine's Storm Water Pollution Prevention Plan (SWPPP) will be amended to cover management of pad drainage.

7.2 Pipelines

All new pipelines will be coated with a non-reflective finish, and they will be supported on common VSMs.

The GMT1 Development Project includes three pipeline alignments:

- GMT1 to CD5 pipelines supported on common VSMs (Sheets 8 through 13 of 36), include:
 - 20-inch produced fluids pipeline – crude oil, gas, and water from GMT1 to ACF for processing
 - 14-inch water injection pipeline – seawater or produced water transported from ACF for injection to support enhanced oil recovery.
 - 6-inch gas pipeline – lean gas transported from ACF for artificial lift
 - 6-inch MI pipeline – MI transported from ACF for injection to support enhanced oil recovery
 - Power and fiber optic communication lines
 - Space for a 24-inch future pipeline
- CD5 to CD4N 14-inch water injection pipeline in existing pipe rack – seawater or produced water transported from ACF for injection to support the enhanced oil recovery
- CDN4 to ACF/CD1 pipelines, supported on common VSMs (Sheets 16 and 17 of 36) include:
 - 14-inch water injection pipeline – water transported from ACF for injection
 - Space for an 8-inch future pipeline
 - Space for a 24-inch future pipeline

The project will produce 3-phase hydrocarbons (oil, gas, and water) that will be carried by pipeline that ties into the CD5 pipeline going to the ACF at CD1 for processing. Sales quality crude oil processed at the ACF will be transported from CD1 via the Alpine Oil

Pipeline and Kuparuk Pipeline to the TAPS for shipment to market. MI and water injection (for the enhanced oil recovery project), will be delivered to the GMT1 drill site from CD1 by pipelines that tie-in at CD5. Lean gas for artificial lift will also be transported from CD1 to GMT1 (via a tie-in at CD5). The production crude and water injection pipelines will be designed to allow pigging from GMT1 to the ACF.

Pipelines will be supported on common VSMs placed approximately 55 feet (ft) apart. Approximately 1,000 VSMs will be required from GMT1 to CD5 (footprint approximately 0.072 acres). Fiber optic cable and power cables will be suspended from VSMs via messenger cable. The decision to use messenger cables rather than cable trays (as proposed in the 2004 ASDP EIS) was based on experience over time that cable trays do not have sufficient structural integrity to span the distance between VSMs; messenger cables are the current design standard. Pipelines (including suspended cables) will be a minimum of 7-ft above ground surface as shown in Appendix A, Sheets 19 and 20 of 36.

At each stream or river crossing, the pipeline will maintain the same elevation, providing greater pipe height across the stream and adjacent riparian areas. Where possible, pipelines will be constructed at least 350 ft away from the road to minimize caribou disturbance and prevent excessive snow accumulation. Pipelines are typically constructed within 1,000 ft of roads to allow for visual inspection from the road. Pipeline design would comply with the American Society of Mechanical Engineers (ASME) Codes B31.4 and B31.8 and CPAI internal standards. All pipelines will be hydrotested prior to startup as required by the code of construction (e.g., B31.4 and B31.8).

The proposed GMT1 to CD5 pipeline is located just north of the proposed access road and travels in a roughly straight line to the east-northeast from GMT1, immediately north of several lakes until reaching the Tifmiaqsiubvik (Ublutuocho River). After crossing the Tifmiaqsiubvik on the proposed 350-foot long bridge, the pipeline runs roughly north-northeast in a straight line to CD5. The pipeline route crosses through the southern portion of the Fish Creek 3-mile setback and crosses the Tifmiaqsiubvik ½ mile setback for a short distance. The current GMT1 Development Project has been optimized to reduce the length pipeline in the Fish Creek setback by 2.4 miles from the 2004 ASDP EIS preferred alternative.

The proposed GMT1 14-inch water injection pipeline will be installed on the existing pipe rack from CD5 to CD4. From CD4N, the water injection pipeline will run approximately 3.3 miles north, parallel to the existing CD4N pipeline and the existing Alpine Oil Pipeline. This new set of pipeline VSMs is required because there is insufficient capacity for transport of water to GMT1 in existing pipelines. Approximately 400 new VSMs (footprint approximately 0.029 acres) will be aligned to match existing VSMs to avoid a picket-fence effect that could impede caribou movement. The pipelines will be a minimum of 7 feet above the tundra as measured at VSMs. At each stream or river crossing, the pipeline will be maintained at the same elevation, thus providing higher pipe height

across the stream and adjacent riparian habitat. Pipelines will be hydrotested prior to startup per the original code of construction (e.g., ASME B31.4 and B31.8).

7.3 Access Road

A 7.8 mile long gravel road is proposed to connect GMT1 with CD5. The road is designed to maintain the existing thermal regime and to withstand a 50-year flood event plus 3 feet of freeboard. The proposed access road will be constructed with gravel and will be a minimum of 5.0 ft deep with side slopes of 2:1 (Sheet 22). The roadway surface will be 32 feet across (crown width). The proposed road will be located immediately south of the proposed GMT1 to CD5 pipeline and travel from GMT1 along a roughly direct route to the east-northeast, immediately north of several lakes, until reaching the Tifmiaqsiubvik (Ublutuoch River). The road crosses the river with a proposed 350-foot long bridge, then runs roughly north and curves to the east, connecting to CD5 access road. The GMT1 access road crosses through the Fish Creek setback and the Tifmiaqsiubvik (Ublutuoch River) setback. The current GMT1 Development Project has been optimized to reduce the length of road in the Fish Creek setback by 2.7 miles from the 2004 ASDP EIS preferred alternative.

BLM protective measures designate additional mitigations that apply in select biologically sensitive areas, including designated setback areas for many major waterways. The Fish Creek (3-mile setback) and Tifmiaqsiubvik (½-mile setback) are the only designated waterways in the GMT1 project vicinity. K-1 prohibits permanent oil and gas facilities, including gravel roads, pads, airstrips, and pipelines within the setback. On a case-by-case basis essential pipeline and road crossings are permitted through setback areas. Both the GMT1 access road and pipeline crossing of the Fish Creek setback were authorized under the 2004 ASDP ROD.

Roughly where the GMT1 road connects to the CD5 access road, it crosses over the CD5 pipeline. To ensure that the existing thermal regime (i.e., permafrost) is maintained, the GMT1 road and CD5 pipeline crossing will be installed according to Sheet 21 of 36 with an impermeable membrane and rigid insulation installed under the pipelines, between the pipelines and existing ground.

Bridges and Culvert Batteries

Drainages within the project area are shown on Sheets 7, 10, 11, 12, 13 and 14. Bridges are proposed for road crossings as illustrated on the Sheets 12 and 13. Sheets 26 through 31 show the respective bridge designs. The design of culvert batteries is shown on Sheet 32.

Bridges are proposed for the only two anadromous stream crossings along the GMT1 access road: a 350-foot long bridge crossing the Tifmiaqsiubvik (Ublutuoch River) and a 40-foot bridge crossing Crea Creek (ADF&G 2013). Culverts will be placed in the road to

maintain natural surface drainage patterns. The typical design of culverts and culvert batteries is shown in Appendix A, Sheets 33 and 34 of 36. Culvert(s) will be installed at Barely Creek, between Crea Creek and the Tifmiaqsiubvik to maintain flow. Other culvert locations will be optimized using aerial photography and site inspections by the design engineers during breakup. The majority of culverts will be installed prior to breakup but additional culverts may be placed after breakup as site-specific needs are further assessed.

Tifmiaqsiubvik (Ublutuoch River) Bridge

The Tifmiaqsiubvik (Ublutuoch River) bridge will be constructed using 5 sets of 32-inch pilings positioned approximately 85 ft apart and a bridge deck elevated approximately 26 ft BPMSL above the ground level made of 31-foot wide precast concrete slabs. The bridge deck will have a removable guardrail and the bridge will be rig-capable. The pipelines will be located on the bridge on structural steel supports attached to the bridge girders, below the bridge deck. Sheet pile abutments for erosion protection will be located at each end of the bridge.

The Tifmiaqsiubvik (Ublutuoch River) bridge design is shown in Appendix A, Sheets 29 through 31 of 36. The 350-foot long Tifmiaqsiubvik bridge would extend bank to bank, and is designed to avoid impacts to the main channel and be wide enough to span a 50-year flood (approximately 11.9 ft BP mean sea level [BPMSL]). The main channel is located on the eastern side and has a typical summer water level of approximately 1 ft BPMSL. No piers will be located within the main channel, resulting in a span over this channel of 93 ft. See Section 2.2.7.5 for construction details.

Crea Creek Bridge

The 40-foot long Crea Creek bridge will be constructed using two sets of pilings positioned approximately 40 ft apart with sheet pile abutments for erosion protection located at each end of the bridge. The bridge deck will have a removable guardrail and will be rig-capable. The opening for water flow will be 25 ft wide. The Crea Creek bridge design is shown in Appendix A, Sheet 32 of 36.

7.4 Power Source

Electric power for GMT1 operations will be provided by the existing Alpine power system. The power lines will be suspended from pipeline HSMs via messenger cable (see Sheet 8). The drilling rig will initially be powered with on-site diesel electric generators using low sulfur diesel fuel until the power cables are installed.

7.5 Material Site

A total of approximately 625,500 cubic yards (cy) of material required for this project would be used to fill approximately 72.5 acres. In the event the Clover material source is

not available, gravel would likely be obtained from the existing ASRC mine site (shown on Figure 1-1 and described in Section 3.2.1.5). **Table 2-1** shows the amount of material used for project components.

Table 2-1 Gravel Use for GMT1 Development Project

Facility	Footprint (acres)	Fill Quantity (cubic yards)	Notes/dimensions
GMT1 Pad ^a	11.8	131,000	463 to 290 ft wide by 1,200 ft long
Access Road ^a	60.0	488,000	7.8 miles long; 32 ft crown width & minimum 5 foot depth
Valve Pads (east and west)	0.7	6,500	Each pad is 100 ft x 100 ft; with 20 ft x 25 ft extension.
Total Gravel Requirement for GMT1	72.5	625,500	Pads and roads
Clover Material Source Pit Area	18.7 ^b	626,000	610 ft x 1,210 ft

Note: Values are approximate and may change during final design.

ACF = Alpine Central Processing Facility

a = Sheet 5 of 36

b= Material site pit footprint

The Clover material source represents the lowest topography of the material site excavation limits due to a drainage channel flowing north toward the Tifmiaqsiubvik (Ublutuooh River). Proposed development of the Clover material source is shown in Sheets 24 through 28 of 36. It is desirable to begin mining operations at the lowest topography to facilitate drainage of future excavation. Additional study of the proposed mine site is being completed, and results will be used to finalize the Clover Mine Site Mining and Rehabilitation Plan. A general description is provided below.

Borings in the area show that the area is overlain with a 20 to 30-foot layer of overburden, with 30 to 40 ft of usable material underneath. After blasting, these materials will be removed in four lifts. The initial two lifts of overburden will be approximately 15 ft each, and will be stockpiled adjacent to the pit on seasonal ice pad. The third and fourth lifts will be approximately 20 ft each, and supply up to 625,500 cy of gravel required for the project. The lifts will be offset, with the final stepped configuration allowing for a 2:1 side slope to support rehabilitation.

Mining is to be completed in a single winter season, at the end of which the site will be rehabilitated. The rehabilitation plan will include backfilling the overburden into the mined pit and contouring the organic fill material to provide shallow water habitat when the pit floods

naturally during annual spring breakup. Side slopes that remain above water after flooding will be seeded with native vegetation, as will any disturbed areas outside the excavated areas.

7.6 Camp Requirements

All construction crews will be housed at the Alpine base camp, the Nuiqsut Hotel, or at a temporary camp at the drill site or on an ice pad. Sanitary wastes that may be generated from a temporary construction camp will be hauled to an approved disposal site, or treated and discharged under the North Slope General APDES Permit AKG-33-1000. Food waste will be incinerated at Alpine and non-burnable waste will be recycled or trucked to the NSB landfill at Deadhorse.

8.0 ICE ROADS AND OTHER FRESH WATER REQUIREMENTS

Ice roads will be constructed to access the gravel source and construction areas (road, bridges, drill site, and pipelines). Separate ice roads are required for pipeline construction, gravel placement, and general traffic. Ice pads measuring approximately 400 ft by 400 ft may be placed near the GMT1 drill site, Alpine facilities, and on both ends of bridges to support construction and provide temporary storage space.). The approximate ice road routes are shown in Appendix A, Sheets 35 and 36 of 36; exact routes may vary by up to a mile based on topography and other field conditions.

Fresh water is required for domestic use at remote construction camps, construction and maintenance of ice roads and ice pads. Potable water requirements are based on a demand of 100 gallons per day (gpd) per person (estimated up to 100 people at a remote camp), totaling approximately 10,000 gpd during construction seasons. Freshwater may be used for hydrostatic testing. Approximately 1.5 million gallons (mg) of water per mile are used for ice road construction and maintenance (90 days). Approximately 22 miles of ice road will be required (33 mg) during year one of construction, and between 17 and 26 miles of ice road, depending upon completion of the Tifmiaqsiubvik (Ublutuocho River) bridge and the proposed Nuiqsut Spur Road, (up to 39 mg) during year two. The water requirement for an ice lay down pad (400 ft by 400 ft; maintained for 90 days) is estimated at 1.1 mg, although the size and maintenance requirements will vary. Water for construction and maintenance of ice roads will be withdrawn from lakes in the vicinity of the project as authorized by temporary water use permits and fish habitat permits where necessary.

9.0 DRILLING

Drilling is planned to begin in the second quarter of 2017 and will continue until all planned wells are completed, estimated to be 15 to 36 months. The drilling rig and associated camp will initially be fueled by ULSD until power lines are installed. A temporary camp will be located at GMT1 during drilling. Sanitary wastes that may be

generated from the camp will be hauled to an approved disposal site, or treated and discharged under the North Slope General APDES Permit AKG-33-1000. Food waste will be incinerated at Alpine and non-burnable waste will be recycled or transported to the NSB landfill at Deadhorse. No permanent camp facilities are required at GMT1.

10.0 FLUID STORAGE

Secondary containment for all fuel storage tanks will be a minimum of 100 percent of the volume of the single largest tank plus at least 10 percent for precipitation. Manifolded tanks without isolation valves will be treated as a single tank for calculating secondary containment requirements. Specific information on tanks and spill prevention details are contained in the contingency plans discussed in Section 13.0.

Diesel may be stored on site during drilling and construction operations. During the operations phase other fluid storage may include corrosion inhibitor, scale inhibitor, methanol, emulsion breaker and foam inhibitor.

Fuel storage will comply with state and federal oil pollution prevention requirements, according to the Alpine ODPCP and SPCC Plan. Secondary containment for fuel storage tanks will be sized as appropriate to container type and according to governing regulatory requirements in 18 AAC 75 and 40 CFR 112.

11.0 NATIVE HIRE POLICY

CPAI is committed to continuing its partnership with local contractors and businesses in the development of GMT1 through competitive bid contracting opportunities. When reasonably foreseeable to do so, CPAI has committed to hire and where appropriate to provide training to Kuukpik shareholders, Nuiqsut residents and Alaska Natives. When appropriate, local resident hire will continue to be coordinated through the Kuukpik employment coordinator to identify and place qualified individuals interested in working on the project. In addition, CPAI and our contractors assist with scholarships, career training and internship opportunities to further expand local workforce capabilities and ensure that local residents are hired and retained as CPAI's employment requirements increase.

12.0 TRAINING

CPAI provides new-employee orientation on health, safety, and environmental issues, annual environmental training seminars, and appropriate certification classes for specific activities, including spill prevention and response, as noted above. All North Slope employees and contractors are required to complete an 8-hour unescorted training program. All trainees in that program receive a Field Environmental Handbook and an Alaska Safety Handbook. Project specific training is provided for all personnel working in the NPR-A. A key objective of this program is to increase awareness of the environmental, social, and cultural issues that relate to the NPR-A. This training

emphasizes protection of archaeological and biological resources; avoiding conflicts with subsistence activities, relevant health and safety measures, and project mitigation commitments.

13.0 CONTINGENCY PLANS

CPAI will amend the existing Alpine Development Oil Discharge Prevention and Contingency Plan (ODPCP) and Alpine Spill Prevention, Control, and Countermeasure (SPCC) Plan to address construction and operation of the new GMT1 drill site. The Alpine ODPCP complies with State of Alaska requirements in AS 46.03.020(10)(A) and 18 AAC 75 and federal Department of Transportation (DOT) requirements in 49 CFR 194. The SPCC Plan complies with federal EPA regulations in 40 CFR 112.

The intent of the ODPCP and SPCC Plan is to demonstrate CPAI's capability to prevent oil and hazardous materials spills from entering the water and land and to ensure rapid response if a spill event occurs.

13.1 Spill Prevention Measures

CPAI has designed the project facilities to minimize the possibility of spills. CPAI will also implement a pipeline maintenance and inspection program and an employee spill prevention training program to further reduce the likelihood of spills occurring.

CPAI will design and construct the pipelines to comply with all state, federal, and local regulations, and will go beyond those minimum requirements, as described below. The pipelines will be constructed of high-strength steel and will have wall thicknesses equal to or in excess of regulatory requirements. Welds will be validated using non-destructive examination (NDE) (i.e., radiography and ultrasonic) during pipeline construction to ensure their integrity, and the pipelines will be tested hydrostatically prior to operation. Manual valves will be placed on the production pipeline on both sides of the Ublutuoch (Tinmiagsiugvik) Channel to minimize spill volume in the event of a release.

CPAI's design of production facilities will include provisions for secondary containment for hydrocarbon-based and hazardous materials, as required by state and federal regulatory requirements.

CPAI will provide regular training for its employees on the importance of preventing oil or hazardous material spills, and spill response. CPAI will provide new-employee orientation, annual environmental training seminars, and appropriate certification classes about specific issues, including spill prevention and response. CPAI employees will participate in frequent safety meetings, which will address spill prevention and response issues, as appropriate. The CPAI Incident Management Team will also participate in regularly scheduled training programs and will conduct spill response drills in coordination with federal and state agencies.

CPAI will conduct visual examinations of the pipeline and the project facilities, including conducting aerial over flights. Most of the flights will allow inspection both visually and

with the aid of forward-looking-infrared (FLIR) technology. Infrared technology permits identification of spills based on the temperature “signature” resulting when warm fluid (oil) leaks. The FLIR technology is capable of detecting warm spots in darkness or when other circumstances such as light fog or drifted snow limit visibility. FLIR technology also has the ability to identify trouble spots along the pipeline, such as damaged insulation, before a problem occurs. CPAI will also conduct regular ground-based visual inspections of facilities and pipelines from gravel and ice roads.

13.2 State Spill Response Plan

CPAI will implement an oil spill contingency plan designed to minimize accidental oil spill impacts. The existing Alaska Department of Environmental Conservation (ADEC) approved Alpine ODPCP will be amended to include the GMT1 drill site. Through the amended Alpine ODPCP, CPAI will ensure that readily accessible inventories of appropriate oil spill response equipment and personnel at Alpine will be available for use at the drill site. In addition, the spill response cooperative, Alaska Clean Seas (ACS), will act as CPAI’s primary response action contractor and will provide trained personnel to manage all stages of a spill response, from detection to containment and cleanup.

The threat to rivers and streams from a possible pipeline spill between the drill site and Alpine will be minimized by quickly intercepting, containing, and recovering spilled oil near the waterway-pipeline crossing points. The response strategy for GMT1 involves two approaches (1) a design component, and (2) equipment pre-staging:

- (1) The pipelines will be located north (downstream) of the road from CD4 westward until exiting the western edge of the delta, and will continue on the north side of the road outside of the delta until near their connection at the CD5 pad. In the delta, this location will prevent ice impacts to the pipelines during breakup because the road will act as a barrier to ice. Outside (west) of the delta the pipelines will also be on the north side of the road because the topography slopes toward the Nigliq Channel in this area and the road would act as a barrier to spilled oil reaching the Nigliq Channel. The road stream crossings will be used as the primary control points to contain the spilled oil. The road could be used for access and staging for spill response.
- (2) Spill response equipment will be placed at the drill site for an initial response. This strategy will facilitate the rapid deployment of equipment by personnel. The effective response time will be considerably reduced by this pre-staging concept and this will expedite equipment deployment to contain and recover spilled oil and to minimize the affected area. During summer, pre-staged containment boom placed at strategic locations in selected river channels will also mitigate a spill and facilitate a response.

13.3 Federal SPCC Plan

The Alpine SPCC Plan will be implemented to prevent oil discharge to navigable waters of the United States. Presently, the Alpine ODPCP acts as the Alpine SPCC Plan; however, an amended stand-alone Alpine SPCC Plan will be established in accordance

with Federal regulation. The Alpine SPCC Plan will incorporate a comprehensive spill prevention program to minimize the potential for oil discharges at Alpine facilities.

13.4 Subsidence Issues

Insulated conductors will be used to minimize subsidence issues and provide near well bore protection. Thermosyphons will be installed directly behind the wells to protect the pipe rack VSMs.

14.0 WILDLIFE ACCESS

Many wildlife species occur on Alaska's North Slope. The proposed GMT1 Development Project may have the potential to disturb or attract wildlife species, resulting in the risk of injury or transmission of disease to field personnel as well as the risk of harm to local animals. In addition, some animals are protected by federal and state regulation such as the MMPA, the ESA, and the Migratory Bird Treaty Act (MBTA). CPAI has developed a Wildlife Avoidance and Interaction Plan in consultation with state/federal agency representatives to provide guidance to CPAI employees and contractors and assist them in implementing appropriate standardized procedures when wildlife is encountered. The Wildlife Avoidance and Interaction Plan is applicable to all of CPAI's North Slope locations. CPAI will follow this Plan for the GMT1 project, and will update or modify the plan as necessary and in consultation with regulatory agencies and local residents. A separate, more detailed plan has been prepared for polar bear interaction during operations, including guidance on the identification of potential dens during remote operations. An updated Polar Bear Avoidance and Interaction Plan was provided to USFWS in January 2012.

15.0 COMMUNICATIONS

Fiber optic communications systems will link the satellite drill sites with CD1.

16.0 SNOW REMOVAL

A snow removal plan will be developed prior to commencement of drilling activities and incorporated in the Alpine Field Services Snow Removal Procedures. Alpine standard operating procedures require the use of snow blowing equipment to minimize gravel carry over to the tundra.

17.0 WASTE DISPOSAL

Drilling wastes (i.e., muds and cuttings) will be disposed of through annular disposal on-site and/or transported to an approved Class I or Class II disposal well such as the Alpine disposal wells at CD1. Drill cuttings may be washed and reused. Reserve pits are not required. Well work waste materials will be managed according to the Alaska Waste Disposal and Reuse Guide. A temporary storage cell will be constructed for staging of muds and cuttings prior to disposal. Produced water will be processed and re-injected to the subsurface.

Sanitary wastes that may be generated from a temporary camp will either be disposed of through annular disposal on-site, hauled to the Alpine wastewater treatment system, or treated and discharged under the North Slope General NPDES Permit AKG-33-1000. Food waste will be incinerated at Alpine and non-burnable waste will be recycled or trucked to the NSB landfill at Deadhorse.

18.0 AIR EMISSIONS

Air emissions from drilling activities will be authorized under an ADEC minor permit. Air quality impacts from the new sources will be minimized by compliance with emissions limits in the air permit. Emissions sources for construction, drilling, and production phases of the GMT1 project are standard equipment that has been used at other recent drill sites on the North Slope. An emissions inventory is being prepared for BLM consideration under the 2011 Memorandum of Understanding (MOU) regarding air quality analysis and mitigation required for agency decision-making.

19.0 CULTURAL RESOURCES

An archaeological survey of the project area has been conducted. Cultural resources will not be significantly impacted by the proposed project. The NSB, State, and local entities will be notified immediately in the event that prehistoric, historic, or archaeological objects are discovered during construction or operations.

20.0 EROSION CONTROL

The GMT1 Development Project will follow the Alpine Facilities Erosion Control Plan, which will be updated to include GMT1. The erosion protection design for GMT1 culverts and bridges are included in Appendix A, Sheet 4 of 36. The Alpine Facilities Erosion Control Plan outlines procedures for operation, monitoring, and maintenance of various erosion control methods. Erosion control at Alpine is accomplished using a combination of biotechnical and engineering control (physical armor) methods. Temporary erosion protection will be placed before breakup following the first construction season to provide protection from a flood event. The temporary protection will be replaced with permanent erosion protection once the gravel has been allowed to season (settle and drain). Alpine's Storm Water Pollution Prevention Plan (SWPPP) will be amended to cover management of pad drainage.

The Alpine Erosion Control plan also contains snow removal and dust control plans. Snow removal plans include the use of snow blowing equipment to minimize gravel carryover to the tundra and placing cleared snow in designated areas. The dust control plan includes watering gravel roads to minimize dust impacts on the tundra and maintain the integrity of the roads.

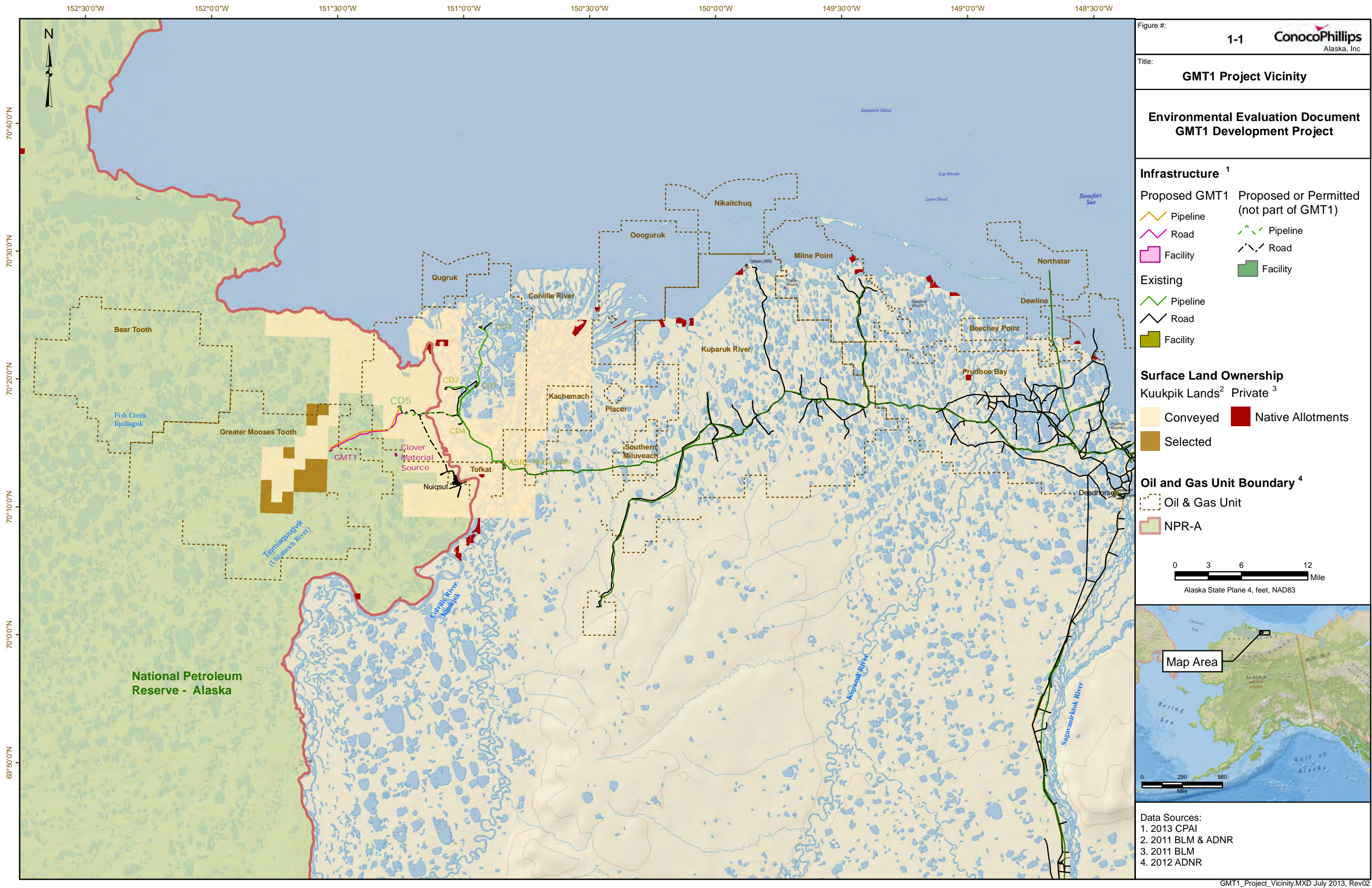
21.0 TINMIAQSIUGVIK RIVER BRIDGE CONSTRUCTION

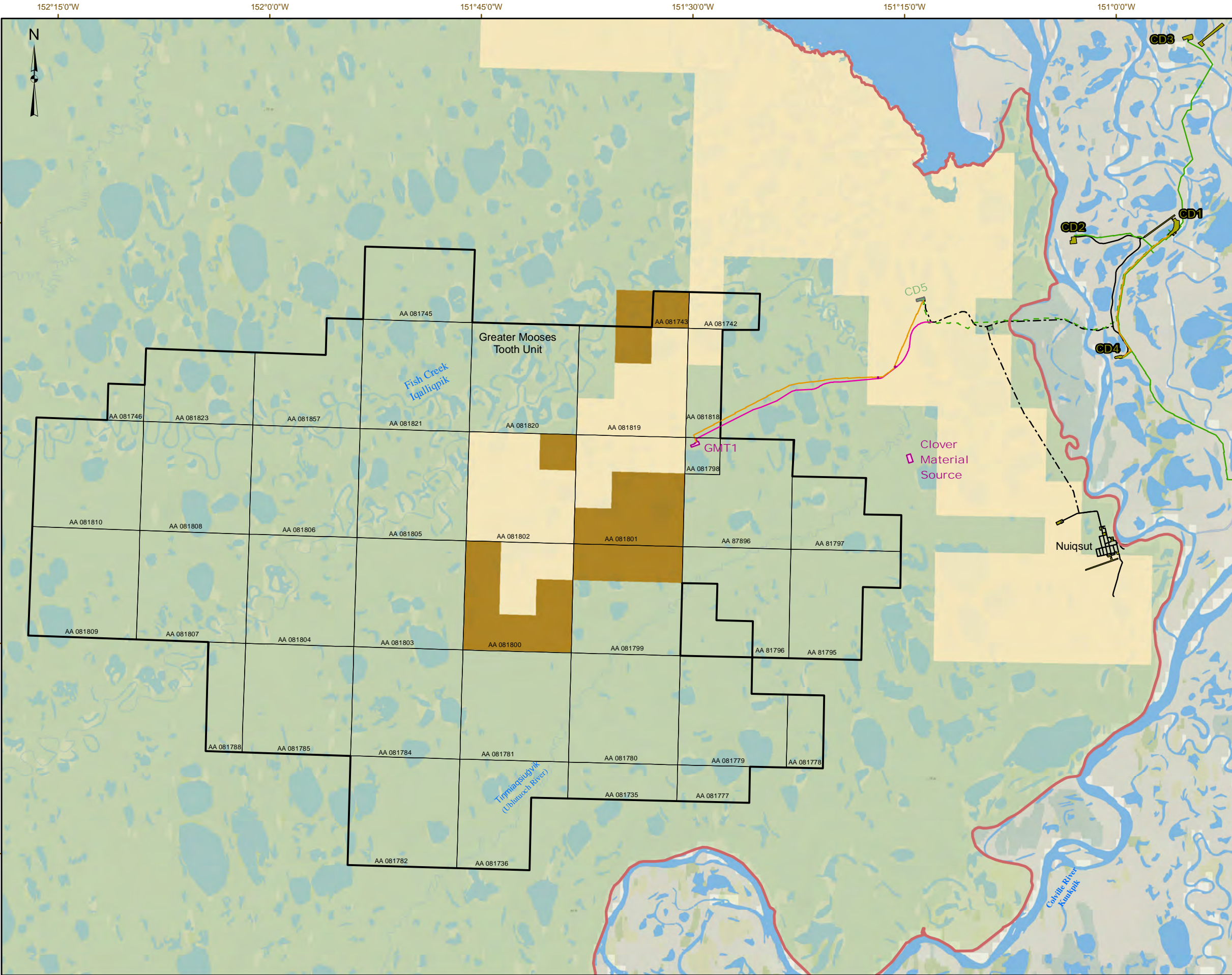
Construction of the 350-foot Tifmiaqsiubvik (Ublutuoch River) Bridge is a major component of the GMT1 Development Project and will take place over one winter construction season. Due to its size and complexity of construction activities, it may be necessary to temporarily place equipment and materials and to perform certain construction activities on the river ice. To facilitate this, ice will be thickened across the entire width of the channel for a length of approximately 200 feet upstream and downstream of the bridge. Traction material such as nut plug may be used on channel ice for safety purposes to prevent slips. Additionally, temporary pile-supported platforms may be constructed to support the weight of large cranes. Cuttings from installation of the piers will be disposed of at the mine site.

Due to safety and logistical concerns, CPAI may request approval to refuel equipment on the channel ice. Appropriate spill containment and CPAI's best practices will be used for all refueling. Mixing of grout and concrete will be performed on channel ice with containment beneath these operations.

Attachment 1
Land Tenure Map

Attachment 2
Wildlife Avoidance and Interaction Plan





70°20'0"N
70°15'0"N
70°10'0"N
70°5'0"N

152°15'0"W 152°0'0"W 151°45'0"W 151°30'0"W 151°15'0"W 151°0'0"W

Figure #:

1-2

Title:

Greater Mooses Tooth Unit
Land Ownership

Environmental Evaluation Document
GMT1 Development Project

Infrastructure¹

Proposed GMT1

Pipeline

Road

Facility

Proposed or Permitted
(not part of GMT1)

Pipeline

Road

Facility

Existing

Pipeline

Road

Facility

Surface Land Ownership

Kuukpik Lands²

Federal³

Conveyed

Selected

NPR-A

Oil and Gas Unit⁴

GMTU

0 1 2 4

Mile

Alaska State Plane 4, feet, NAD83

0 300 600

Mile

Data Sources:

1. 2013 CPAI
2. 2011 BLM & ADNRR
3. 2012 ADNRR
4. 2012 ADNRR

GMTU_Land_Ownership.MXD July 2013, Rev02

Map Area

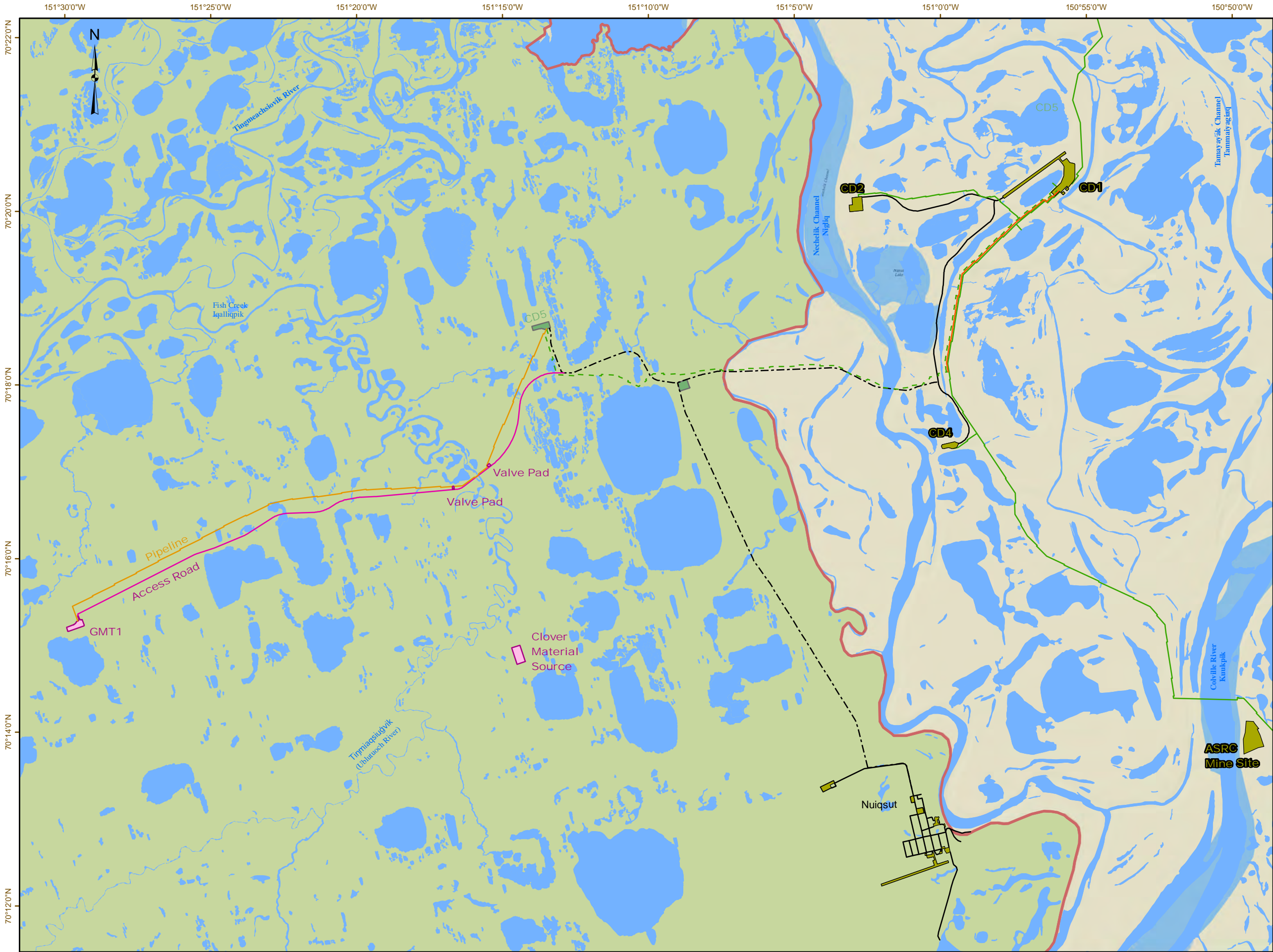


Figure #:

2-1

Title:

GMT1 Project Area

Environmental Evaluation Document
GMT1 Development Project

Infrastructure¹

Proposed GMT1

Pipeline

Road

Facility

Proposed or Permitted
(not part of GMT1)

Pipeline

Road

Facility

Existing

Pipeline

Road

Pad

Boundary²

NPR-A

0 0.5 1 2 Mile

Alaska State Plane 4, feet, NAD83

Map Area

0 300 600 Mile

Data Sources:

1. 2013 CPAI
2. 2012 ADNRR

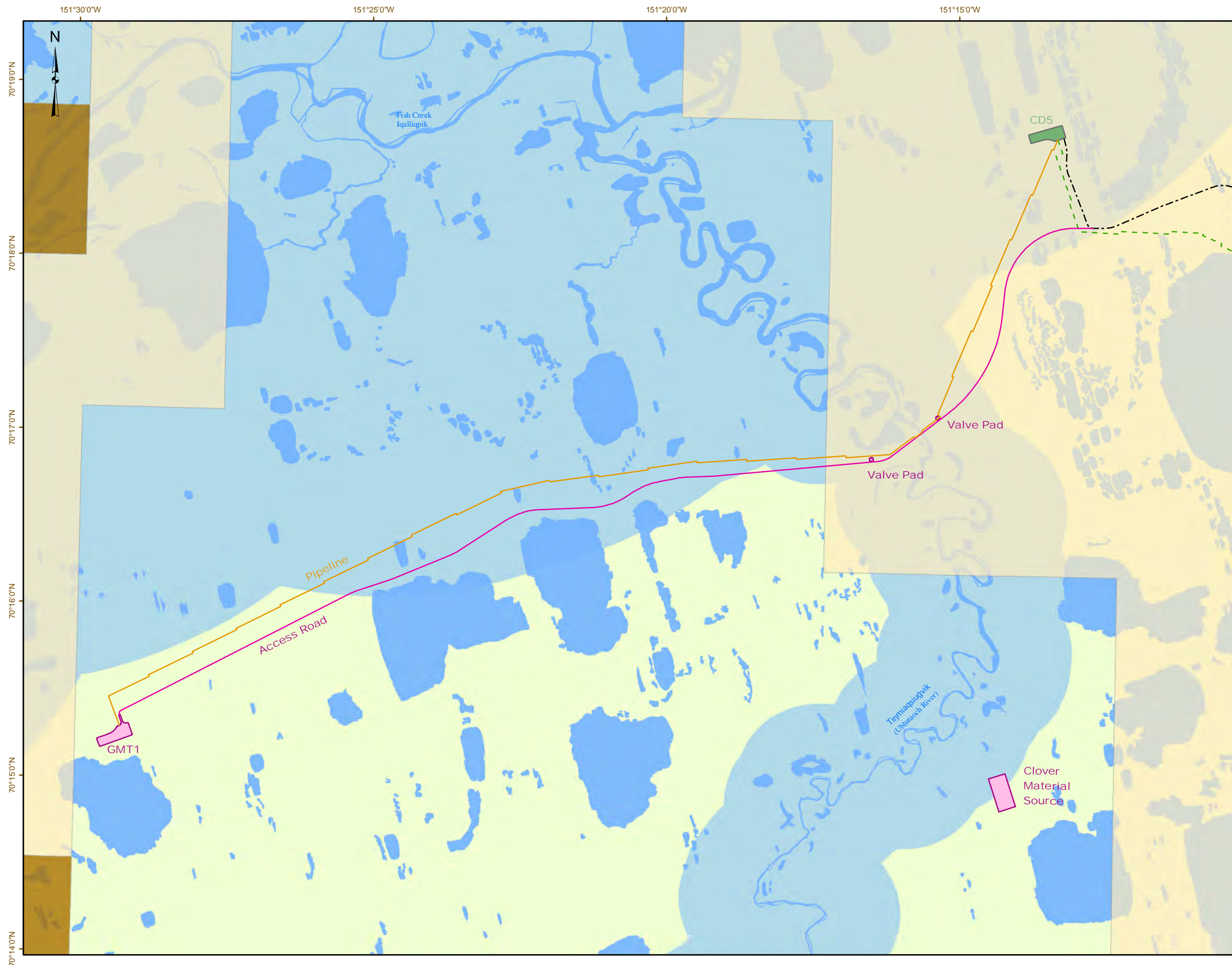


Figure #:

2-2

Title:

Fish Creek and Tinmiaqsiugvik (Ublutuoch River) Setback Areas.

Environmental Evaluation Document

GMT1 Development Project

Infrastructure¹

Proposed GMT1

Proposed or Permitted (not part of GMT1)

Pipeline

Pipeline

Road

Road

Facility

Facility

Surface Land Ownership²

Kuukpiik Lands

Conveyed

Selected

Boundary²

River/Creek

Setback Area

Tinmiaqsiugvik (Ublutuoch River) 0.5 mi

Fish Creek 3.0 mi

0

0.25

0.5

1

Mile

Alaska State Plane 4, feet, NAD83

Map Area

0

300

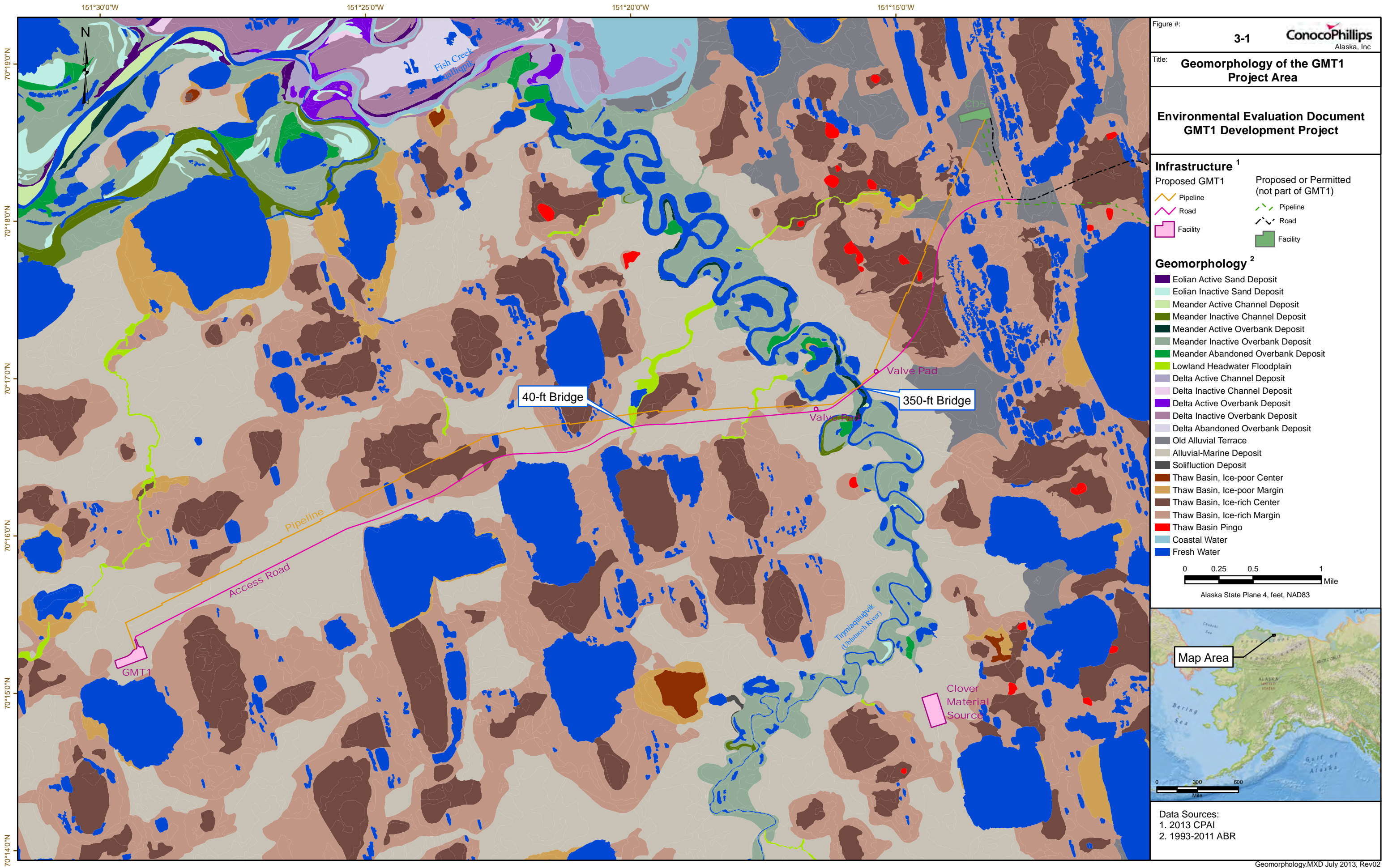
600

Mile

Data Sources:

1. 2013 CPAI

2. 2011 BLM





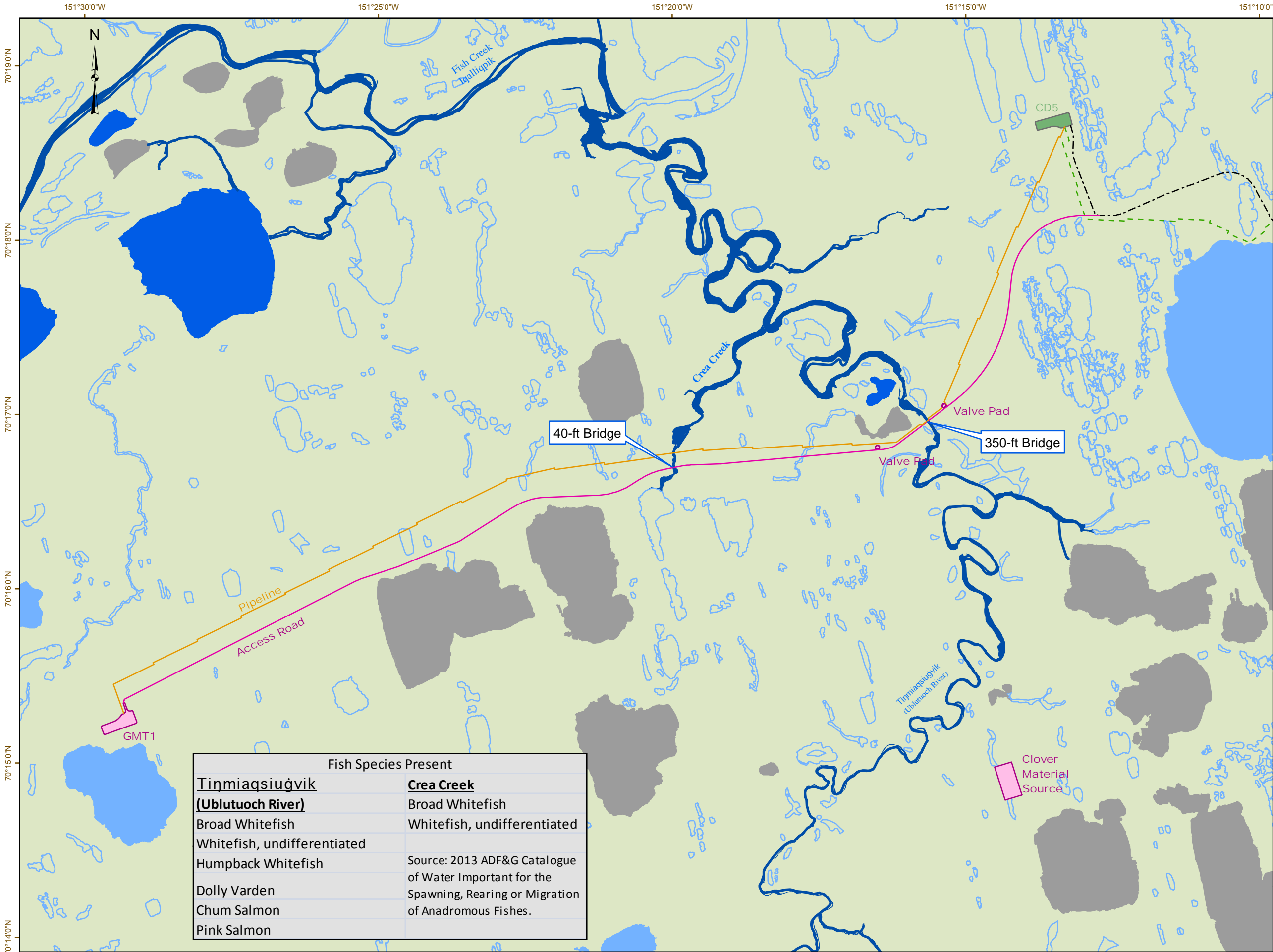


Figure #:

3-4

ConocoPhillips

Alaska, Inc

Title:

Fish Habitat of the GMT1 Project Area

Environmental Evaluation Document
GMT1 Development Project

Infrastructure¹

Proposed GMT1

Proposed or Permitted (not part of GMT1)

Pipeline

Road

Facility

Pipeline

Road

Facility

Anadromous Waterways²

Anadromous Rivers & Streams

Fish Habitat³

Species sensitive to habitat alteration observed

Only species resistant to habitat alteration observed

No fish observed

Lakes not surveyed

00.250.51

Mile

Alaska State Plane 4, feet, NAD83

Map Area

0300600

Mile

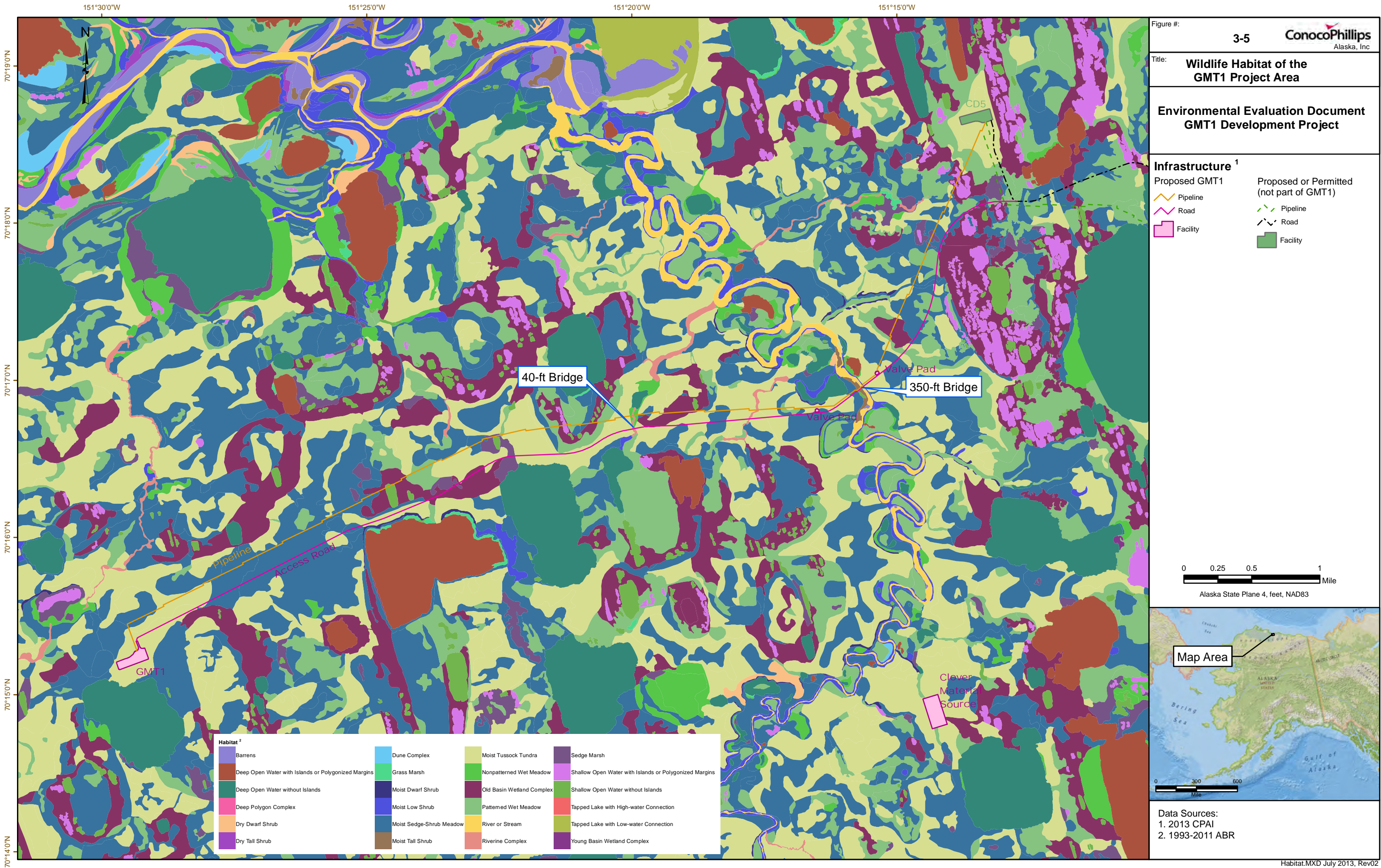
Data Sources:

1. 2013 CPAI

2. 2013 ADF&G

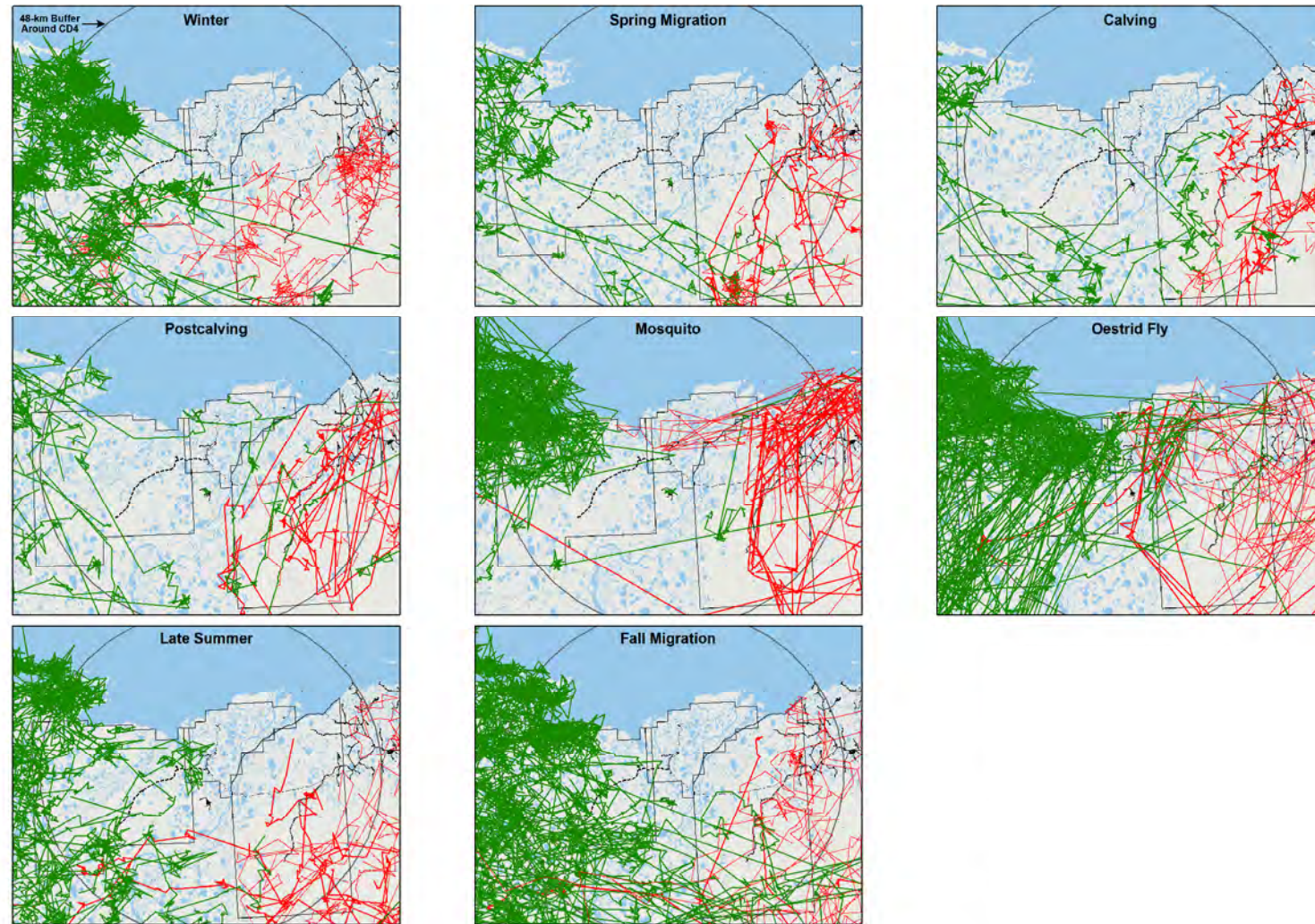
3. 2004 ASDP EIS

Fish Species Present	
<u>Tinmiagsiugvik (Ublutuoach River)</u>	<u>Crea Creek</u>
Broad Whitefish	Broad Whitefish
Whitefish, undifferentiated	Whitefish, undifferentiated
Humpback Whitefish	Source: 2013 ADF&G Catalogue of Water Important for the Spawning, Rearing or Migration of Anadromous Fishes.
Dolly Varden	
Chum Salmon	
Pink Salmon	

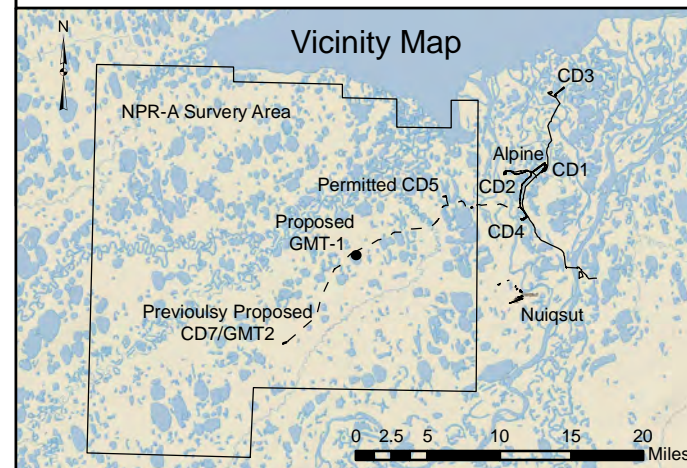
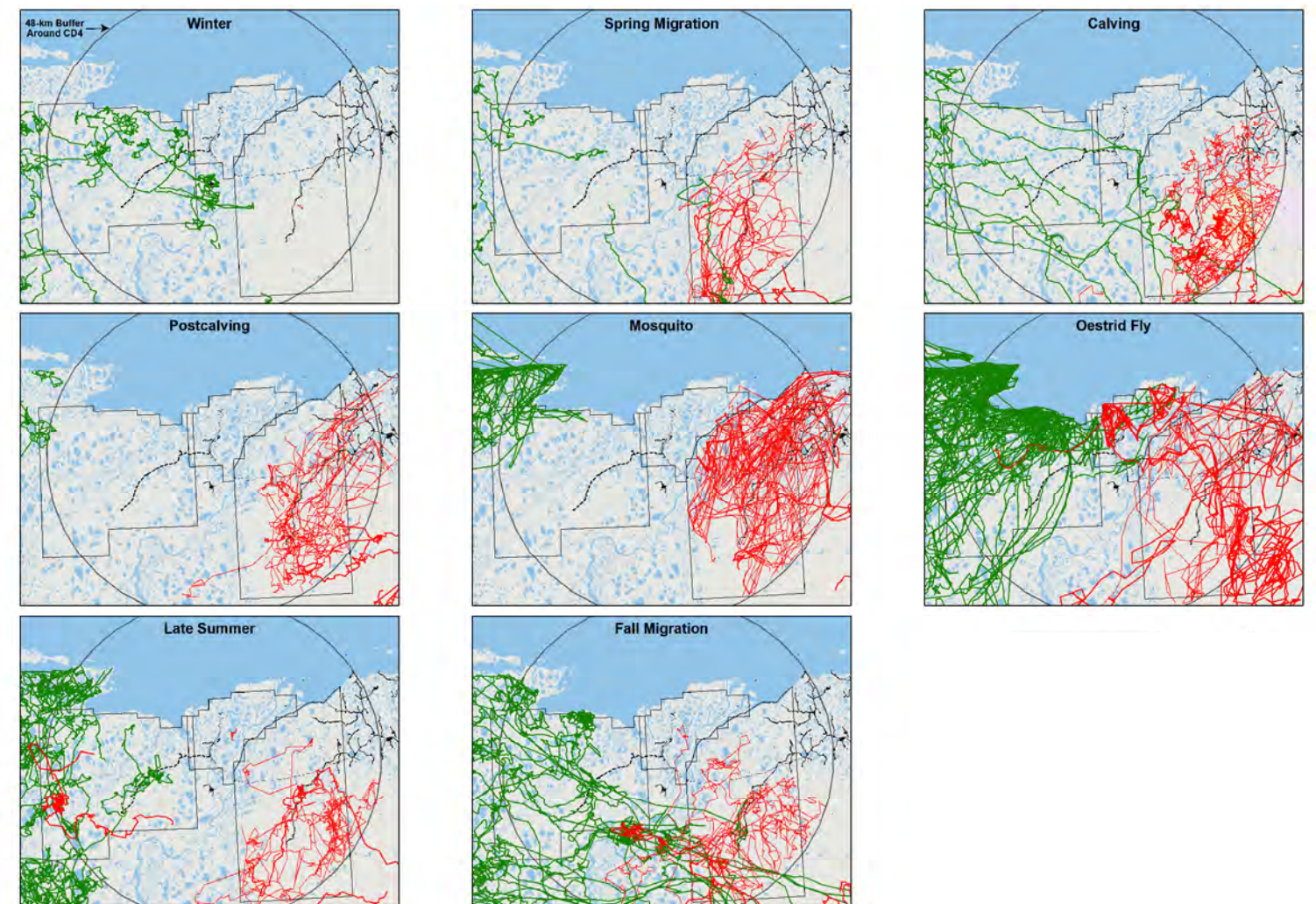




Movements of satellite-collared caribou from the Teshekpuk Herd (1990-2012 and Central Arctic Herd (1986-1990 and 2001-2009 in the ASDP study area during 8 different seasons.



Movements of GPS-collared caribou from the Teshekpuk Her (2004-2012) and Central Arctic Herd (2003-2006, 2008-2012) in the ASDP study area during 8 different seasons.



Legend

- Central Arctic Herd
- Teshekpuk Herd
- Existing Infrastructure
- Proposed ASDP Road
- Aerial Survey Area

Data Sources:
1. 2013 ABR

Figure #:	3-7	ConocoPhillips Alaska, Inc.
Title:	Ranges of the Teshekpuk and Central Arctic Caribou Herds in the GMT1 Project Area	
Environmental Evaluation Document GMT1 Development Project		
Central Arctic Caribou Herds in the GMT1 Project Area.MXD July 2013, Rev02		

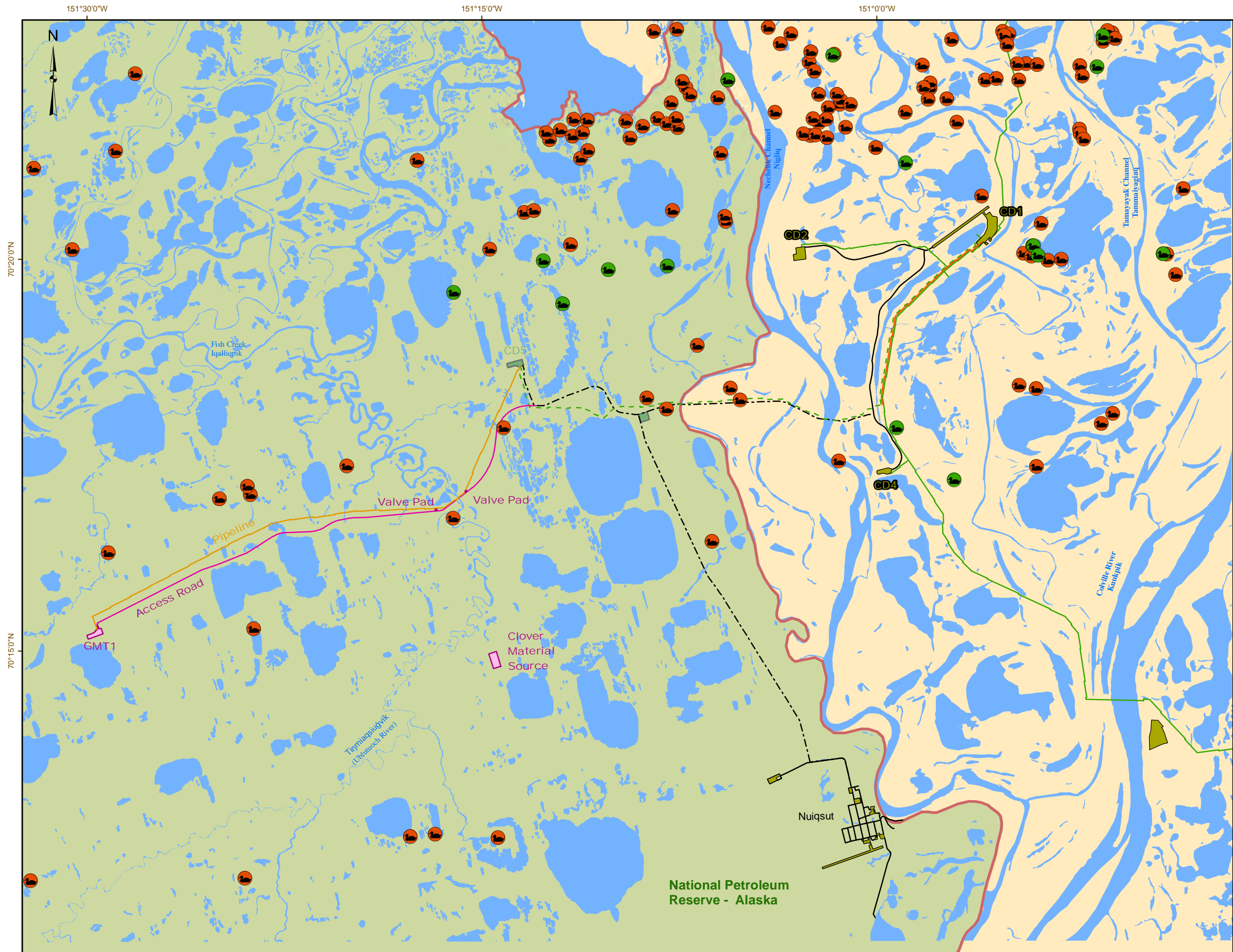


Figure #:

3-9

ConocoPhillips

Alaska, Inc

Title:

Spectacled Eider Occurrence in the GMT1 Project Area

Environmental Evaluation Document

GMT1 Development Project

Biological Data¹

Spectacled Eider Occurrence (1984-2011)

Nest

Observation

Infrastructure²

Proposed GMT1

Pipeline

Road

Facility

Proposed or Permitted (not part of GMT1)

Pipeline

Road

Facility

Existing

Pipeline

Road

Facility

Boundary³

NPR-A

0

0.5

1

2

Mile

Alaska State Plane 4, feet, NAD83

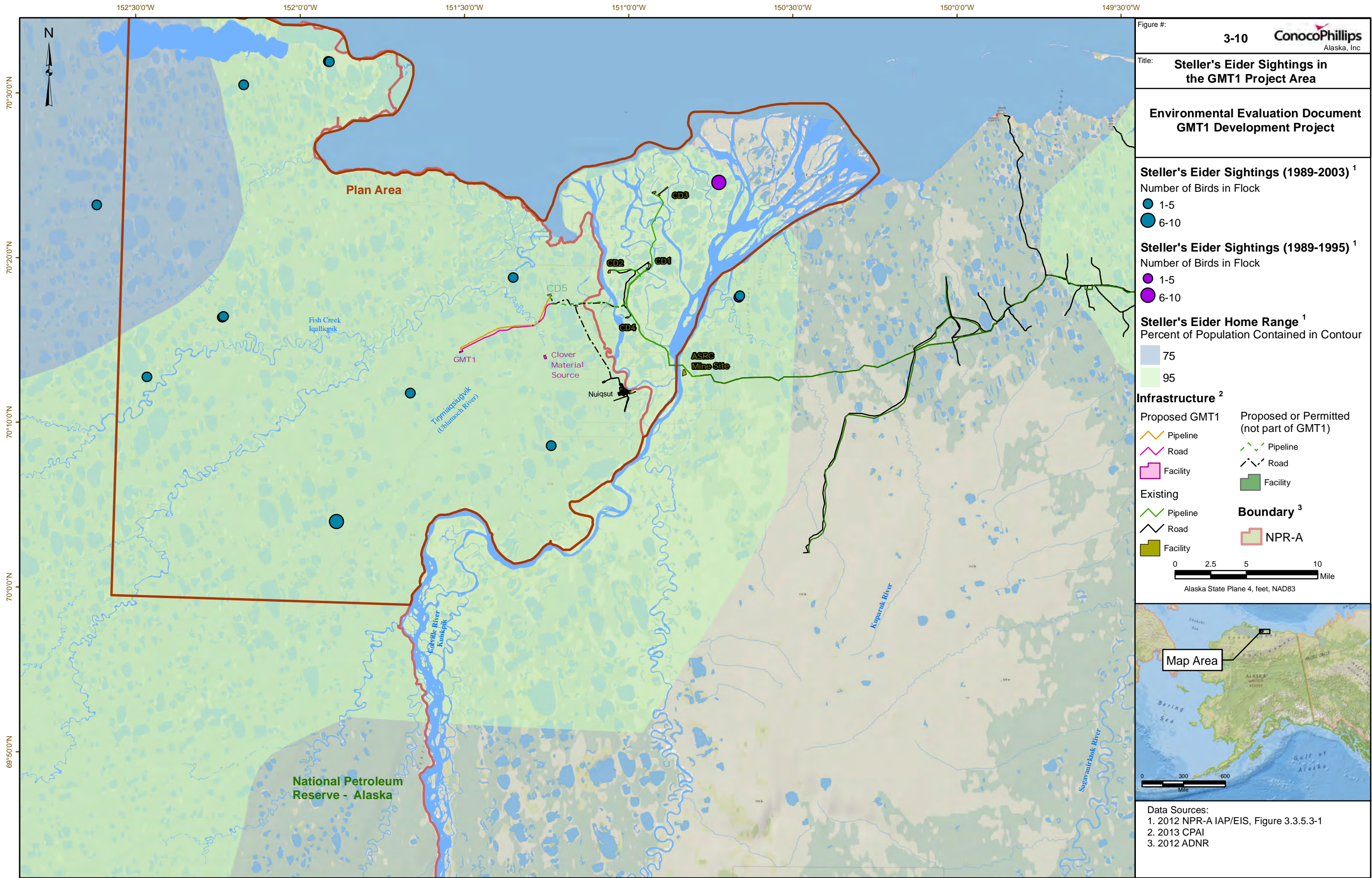
Map Area

Data Sources:

1. 2011 ABR

2. 2013 CPAI

3. 2012 ADN



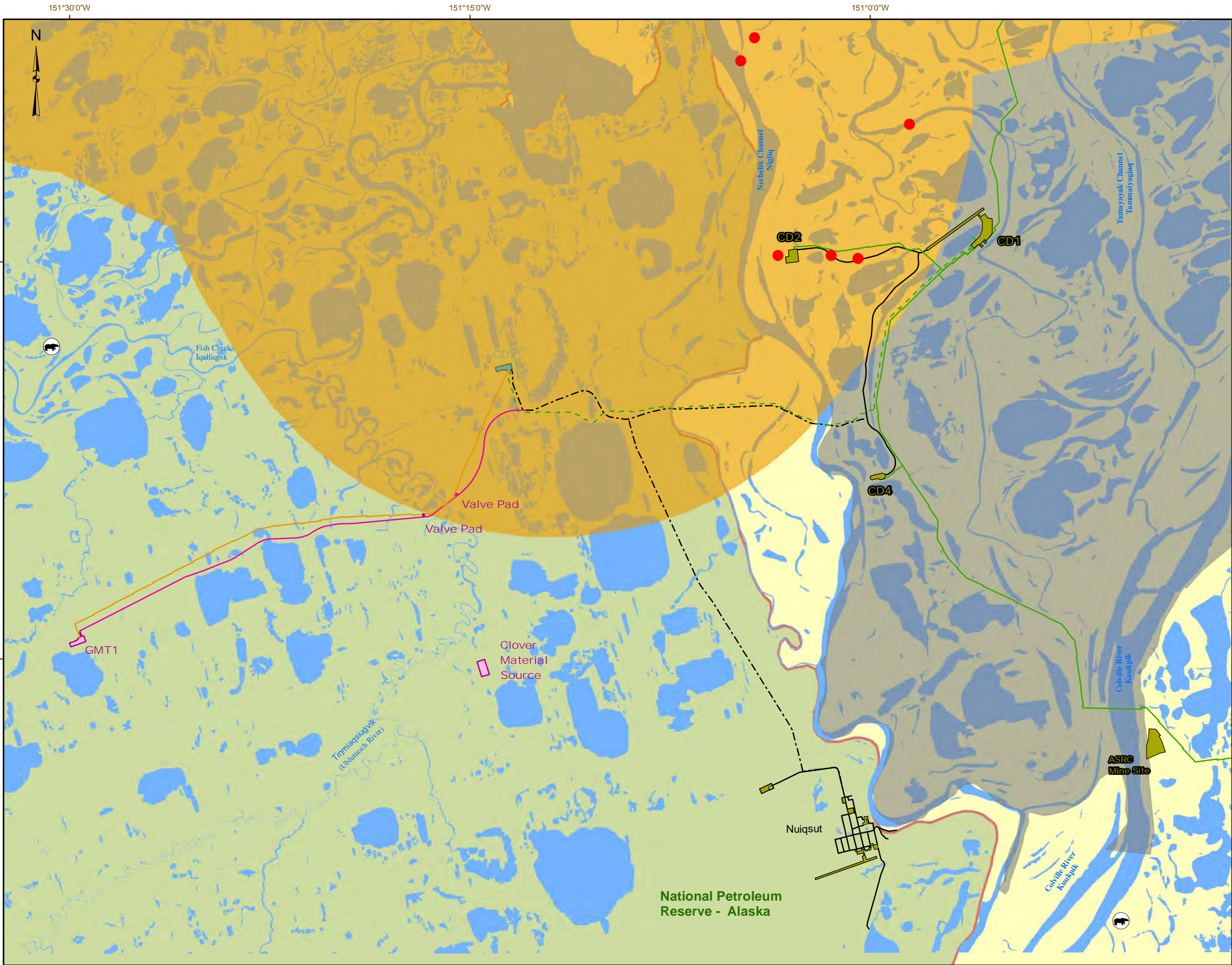


Figure #:

3-11

Title:

Polar Bear Sightings and Den Locations in the GMT1 Project Area

Environmental Evaluation Document

GMT1 Development Project

Polar Bear Data

Den Location (1910-2011)¹

Polar Bear Sighting (1993-2011)²

Polar Bear Critical habitat ³

Previously Designated USFWS Critical Habitat (Denning)

Previously Designated USFWS (Feeding)

Infrastructure ⁴

Proposed GMT1

Pipeline

Road

Facility

Proposed or Permitted (not part of GMT1)

Pipeline

Road

Facility

Existing

Pipeline

Road

Facility

Oil and Gas Unit ⁵

NPR-A

010.512

Mile

Alaska State Plane 4, feet, NAD83

Map Area

0300600

Mile

Data Sources:

1. 2011 USGS

2. 2011 CPAI

3. 2011 USFWS

4. 2013 CPAI

5. 2012 ADN

Polar_Bear_Habitat.MXD July 2013, Rev02

